

AMENDMENT

IN THE CLAIMS:

Please add new claims 24 - 85 as follows:

- 24. An isolated DNA molecule comprising a DNA sequence selected from the group consisting of:
- (a) nucleotides 1202 through 1543 of Figure 2;
 - (b) nucleotide 1252 through 1543 of Figure 2;
 - (c) nucleotides 1279 through 1626 of Figure 3;
 - (d) nucleotides 1333 through 1626 of Figure 3;
 - (e) nucleotides encoding amino acids 283 through 396 of Figure 2;
 - (f) nucleotides encoding amino acids 299 through 396 of Figure 2;
 - (g) nucleotides encoding amino acids 293 through 408 of Figure 3;
 - (h) nucleotides encoding amino acids 311 through 408 of Figure 3; and
 - (i) naturally occurring allelic sequences and equivalent degenerative codon sequences
- of (a) through (h).
25. An isolated DNA molecule comprising a DNA sequence of nucleotides 1202 through 1543 of Figure 2.
26. An isolated DNA molecule comprising a DNA sequence of nucleotide 1252 through 1543 of Figure 2.
27. An isolated DNA molecule comprising a DNA sequence of nucleotides 1279 through 1626 of Figure 3.
28. An isolated DNA molecule comprising a DNA sequence of nucleotides 1333 through 1626 of Figure 3.
29. An isolated DNA molecule comprising a DNA sequence of nucleotides encoding amino acids 283 through 396 of Figure 2.
30. An isolated DNA molecule comprising a DNA sequence of nucleotides encoding amino acids 299 through 396 of Figure 2.
31. An isolated DNA molecule comprising a DNA sequence of nucleotides encoding amino acids 293 through 408 of Figure 3.
32. An isolated DNA molecule comprising a DNA sequence of nucleotides encoding amino acids 311 through 408 of Figure 3.
33. An isolated DNA sequence encoding BMP-2 protein which hybridizes to a DNA sequence of claim 30 under stringent hybridization conditions.
34. An isolated DNA sequence encoding BMP-4 protein which hybridizes to a DNA sequence of claim 32 under stringent hybridization conditions.
35. A vector comprising a DNA molecule of claim 24 in operative association with an expression control sequence therefor.
36. A vector comprising a DNA molecule of claim 33 in operative association with an expression control sequence therefor.
37. A vector comprising a DNA molecule of claim 34 in operative association with an expression control sequence therefor.

38. A host cell transformed with a vector of claim 35.
39. A host cell transformed with a vector of claim 36.
40. A host cell transformed with a vector of claim 37.
41. An isolated DNA molecule comprising a DNA selected from the group consisting of ATCC deposits 40345 and 40342.
42. A method for producing a BMP-2 protein said method comprising the steps of:
 - (a) culturing a host cell transformed with a DNA sequence of claim 33, and;
 - (b) recovering said BMP-2 protein.
43. A method for producing BMP-4 protein. said method comprising the steps of:
 - (a) culturing a host cell transformed with a DNA sequence of claim 34, and;
 - (b) recovering said BMP-4 protein.
44. A BMP-2 made by the method of claim 42.
45. A BMP-4 made by the method of claim 43.
46. A purified BMP-2 polypeptide comprising an amino acid sequence encoded by a DNA sequence comprising nucleotides 1202 through 1543 of Figure 2.
47. A purified BMP-2 polypeptide comprising an amino acid sequence encoded by a DNA sequence comprising nucleotides 1252 through 1543 of Figure 2.
48. A purified BMP-4 polypeptide comprising an amino acid sequence encoded by a DNA sequence comprising nucleotides 1279 through 1626 of Figure 3.
49. A purified BMP-4 protein comprising an amino acid sequence encoded by a DNA sequence comprising nucleotides 1333 through 1626 of Figure 3.
50. A purified BMP-2 protein comprising an amino acid sequence of amino acid 283 through 396 of Figure 2.
51. A purified BMP-2 protein comprising an amino acid sequence of amino acid 299 through 396 of Figure 2.
52. A purified BMP-4 protein comprising an amino acid sequence of amino acids 293 through 408 of Figure 3.
53. A purified BMP-4 protein encoded by an amino acid sequence of amino acids 311 through 408 of Figure 3.
54. A purified BMP-2 protein encoded by a DNA sequence of claim 33.
55. A purified BMP-4 protein encoded by a DNA sequence of claim 34.
56. A pharmaceutical composition comprising a therapeutic amount of a BMP-2 polypeptide of claim 54.
57. A pharmaceutical composition comprising a therapeutic amount of a BMP-4 polypeptide of claim 55.
58. An antibody to a purified BMP-2 polypeptide of claim 54.
59. An antibody to a purified BMP-4 polypeptide of claim 55.
60. A method for modulating cell development comprising administering an effective amount of a BMP-2 of claim 54.
61. The method of claim 60, wherein said method comprises administering BMP-2 to a patient *in vivo*.
62. A method for modulating cell development comprising administering an effective amount of BMP-4 of claim 55.
63. The method of claim 60, wherein said method comprises administering BMP-4 to a patient *in vivo*.

64. A method for inducing cell formation, growth, differentiation, proliferation, and maintenance comprising administering an effective amount of a BMP-2 protein of claim 54.
65. A method for inducing formation of chondrocyte and/or cartilage tissue comprising administering a composition comprising a BMP-2 protein of claim 54.
66. The method of claim 65, wherein said method comprises administering the composition to cells *in vitro* and recovering chondrocytes and/or cartilage tissue.
67. A method for inducing cell formation, growth, differentiation, proliferation, and maintenance comprising administering an effective amount of a BMP-4 protein of claim 55.
68. A method for inducing formation of chondrocyte and/or cartilage tissue comprising administering a composition comprising a BMP-4 protein of claim 55.
69. The method of claim 68, wherein said method comprises administering the composition to cells *in vitro* and recovering chondrocytes and/or cartilage tissue.
70. The protein of claim 54 wherein said protein is a disulfide linked dimer wherein at least one of the subunits of said dimer comprises BMP-2.
71. The protein of claim 55 wherein said protein is a disulfide linked dimer wherein at least one of the subunits of said dimer comprises BMP-4.
72. A pharmaceutical composition comprising an effective amount of a BMP-2 protein of claim 54 in admixture with a pharmaceutically acceptable vehicle.
73. A pharmaceutical composition comprising an effective amount of a BMP-4 protein of claim 55 in admixture with a pharmaceutically acceptable vehicle.
74. A composition for cartilage formation comprising an effective amount of a BMP-2 protein of claim 54 in a pharmaceutically acceptable vehicle.
75. A composition for bone and/or cartilage formation comprising an effective amount of a BMP-4 protein of claim 55 in a pharmaceutically acceptable vehicle.
76. A composition of claim 74 further comprising a matrix for supporting said composition and providing a surface for cartilage growth.
77. A composition of claim 75 further comprising a matrix for supporting said composition and providing a surface for bone and/or cartilage growth.
78. The composition of claim 76 wherein said matrix comprises a material selected from the group consisting of hydroxyapatite, collagen, polylactic acid and tricalcium phosphate.
79. The composition of claim 77 wherein said matrix comprises a material selected from the group consisting of hydroxyapatite, collagen, polylactic acid and tricalcium phosphate.
80. A method for inducing cartilage formation in a patient in need of same comprising administering to said patient an effective amount of the composition of claim 72.
81. A method for inducing bone and/or cartilage formation in a patient in need of same comprising administering to said patient an effective amount of the composition of claim 73.
82. A pharmaceutical composition for wound healing and tissue repair said composition comprising an effective amount of a BMP-2 protein of claim 54 in a pharmaceutically acceptable vehicle.
83. A pharmaceutical composition for wound healing and tissue repair said composition comprising an effective amount of a BMP-4 protein of claim 55 in a pharmaceutically acceptable vehicle.
84. A method for treating wounds and/or tissue repair in a patient in need of same comprising administering to said patient an effective amount of the composition of claim 82.
85. A method for treating wounds and/or tissue repair in a patient in need of same comprising administering to said patient an effective amount of the composition of claim 83.--